5G Testbed @ IIT Kanpur

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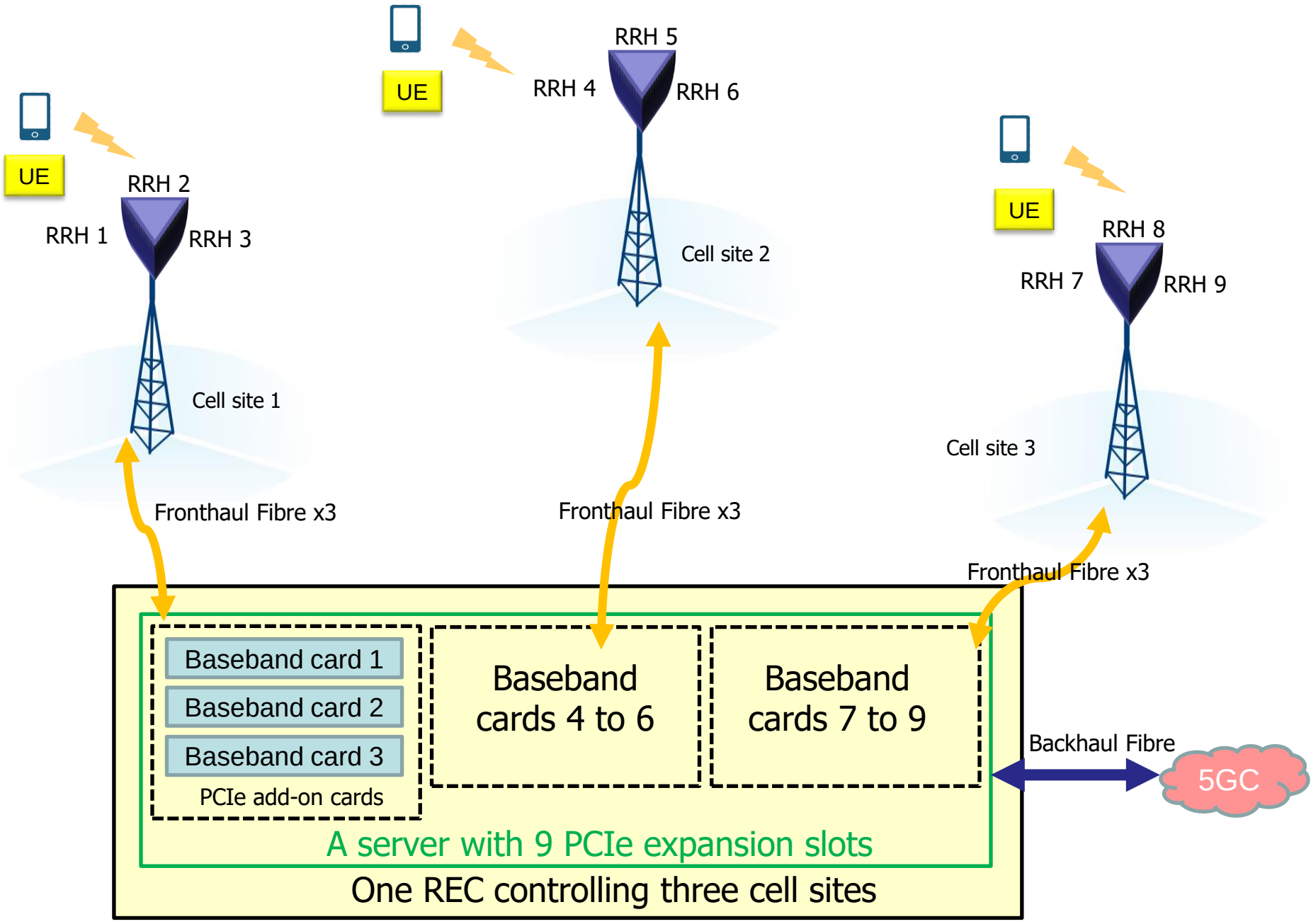
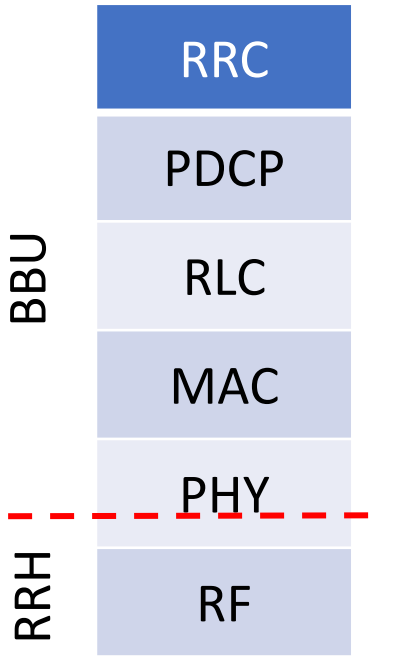
5G testbed: Overall deployment



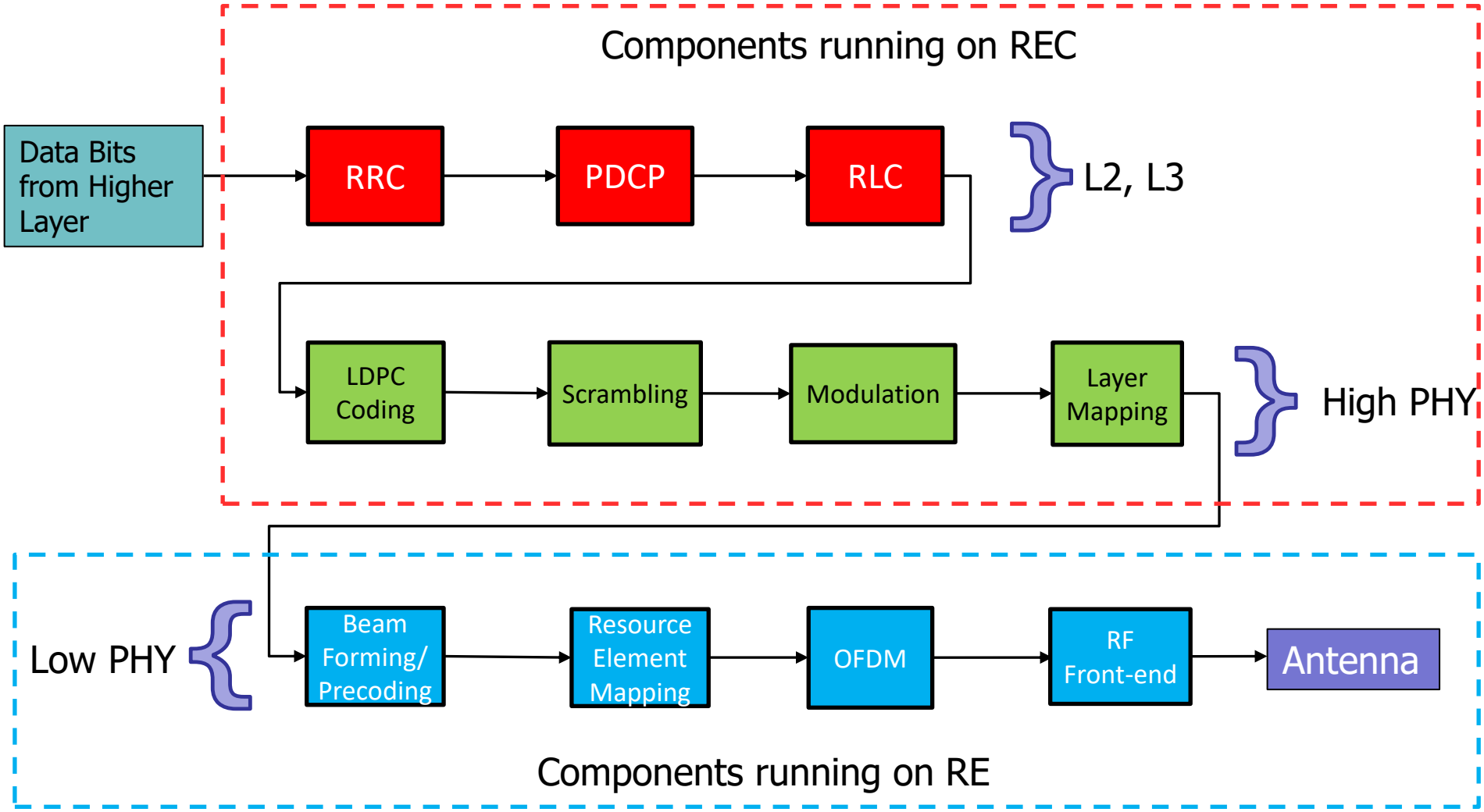
Base station : Functional decomposition

- Transceiver component mapping:
  - As per split 7.1
- Processing load on BBU:
  - PHY (High)
  - MAC
  - RLC
  - PDCP
  - RRC
- Processing load on RRH
  - PHY (Low)
  - RF

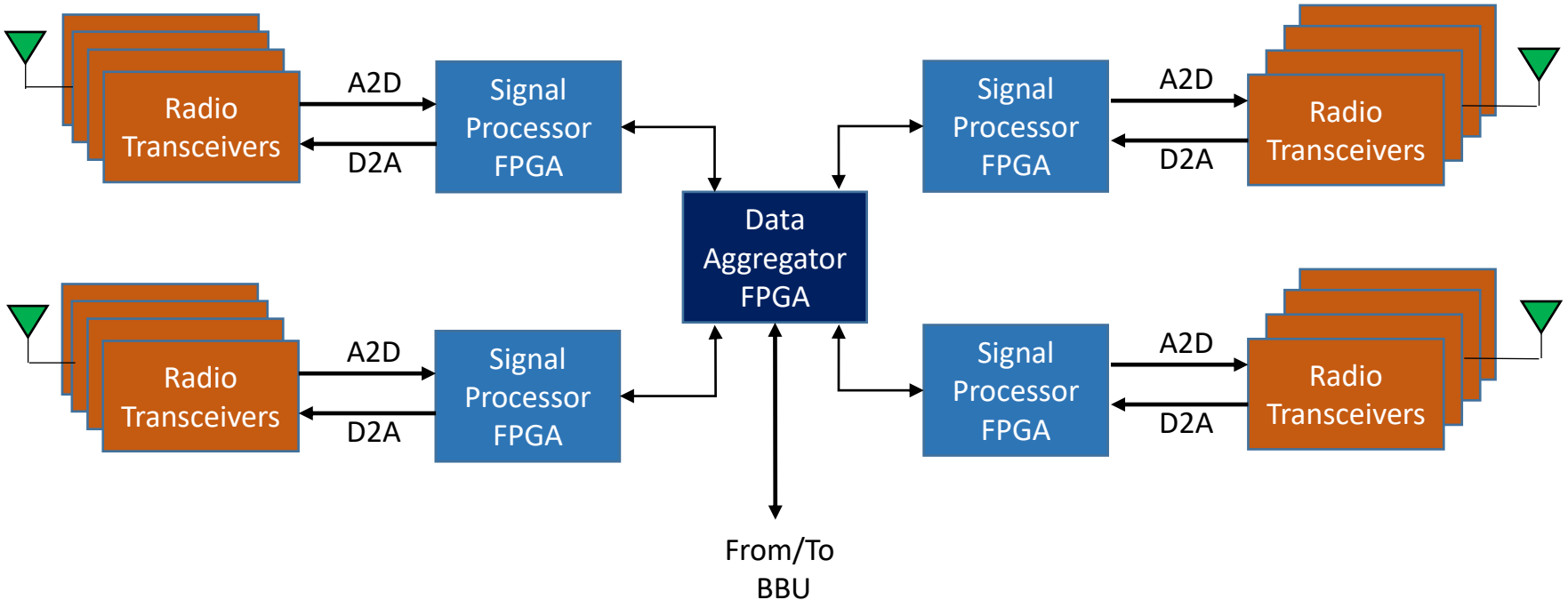


Functional Split : 7.1

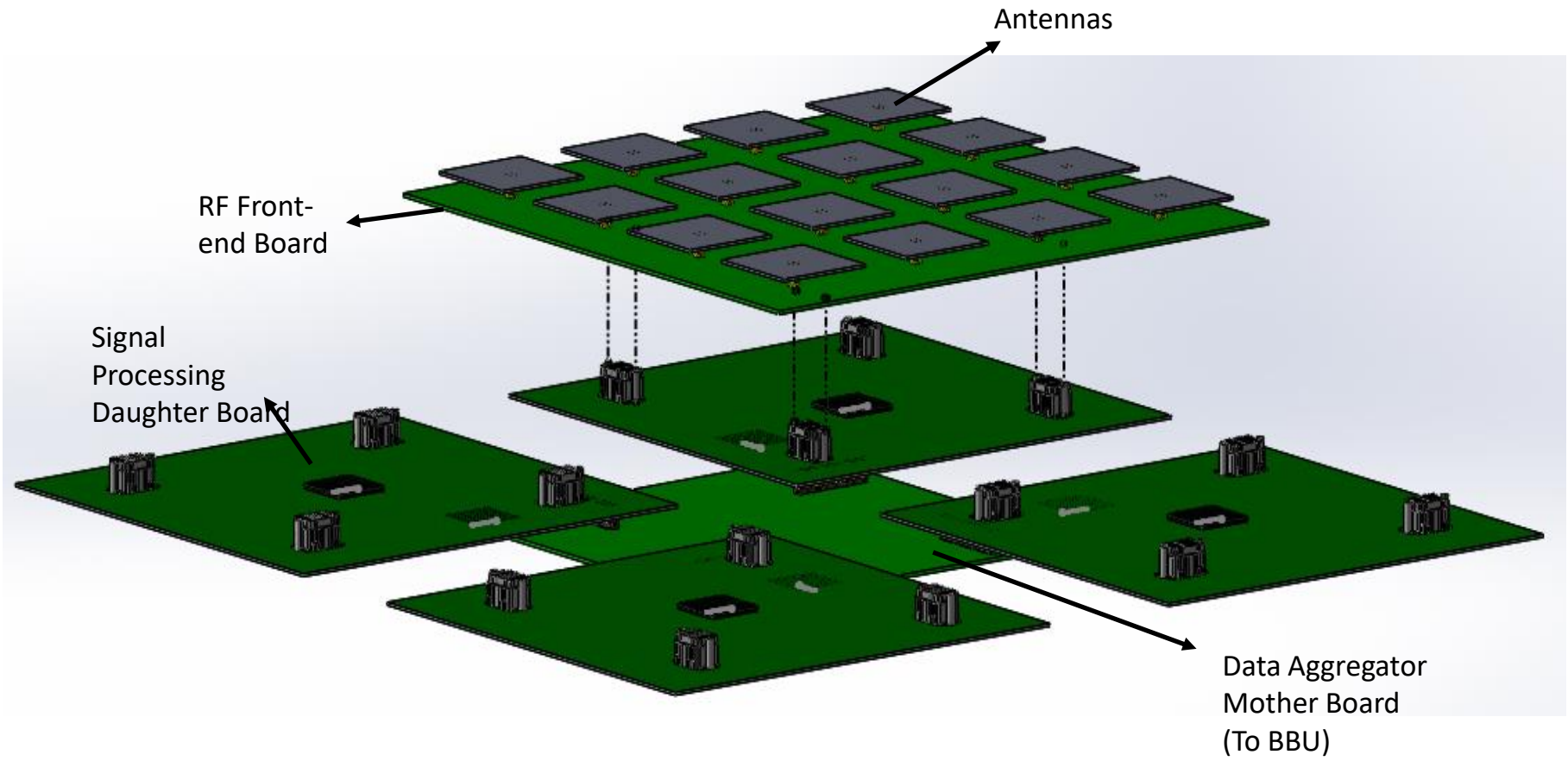
PHY layer split between BBU & RRH



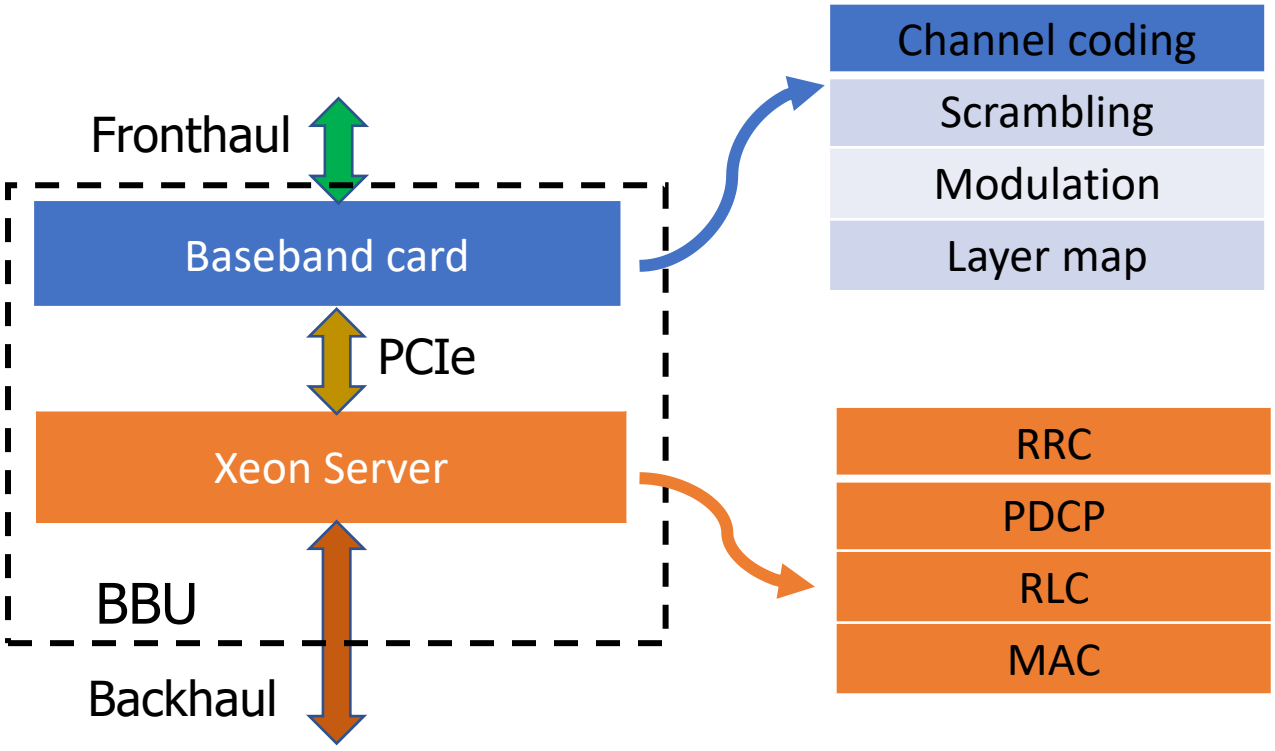
RRH Block Diagram



RRH hardware



BBU : Requirements & Architecture

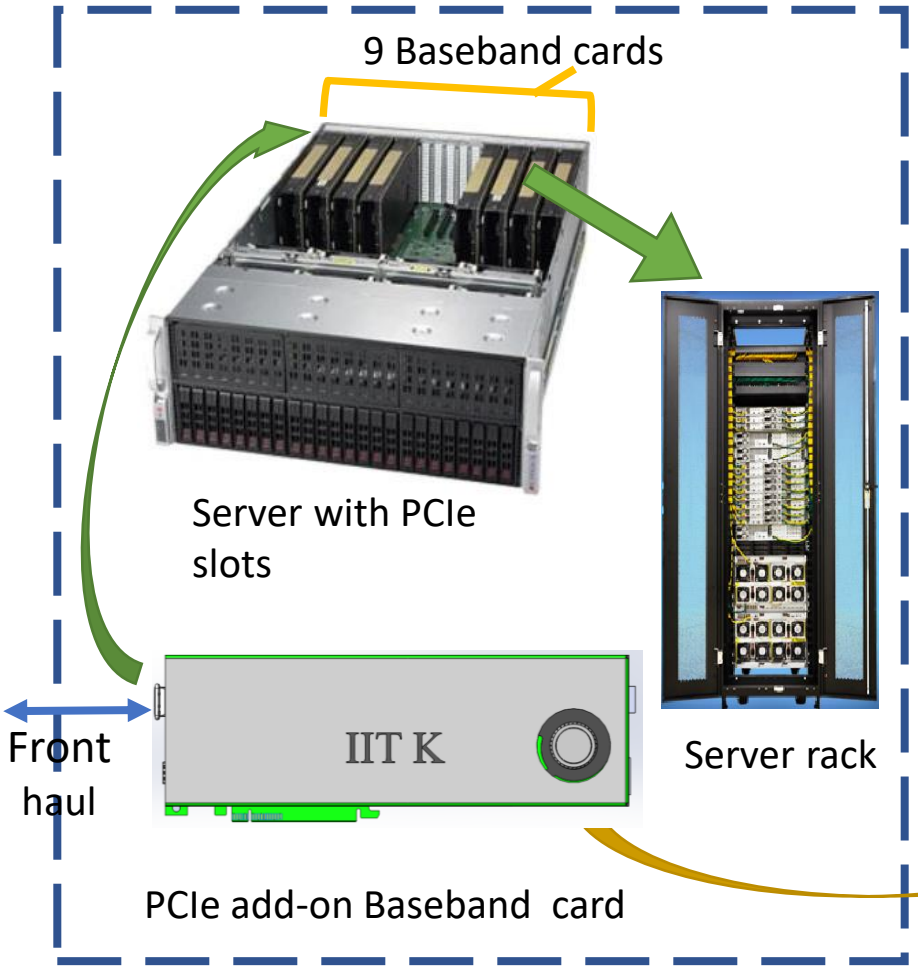


Functional mapping within BBU

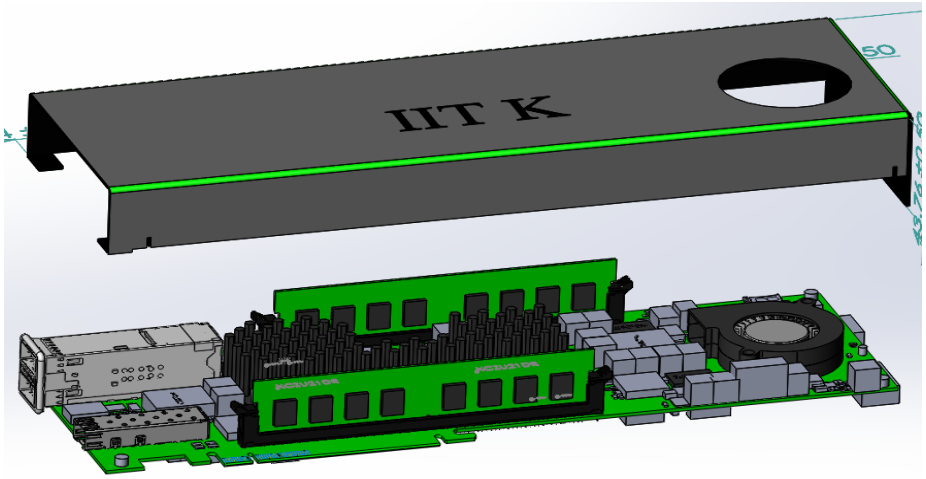
- H/w features:
  - Scalable
  - Processing power
  - High bandwidth interfaces
  - Low latency
  - Power efficient

One BBU = Server + 9 Baseband Cards

Baseband Unit (BBU)



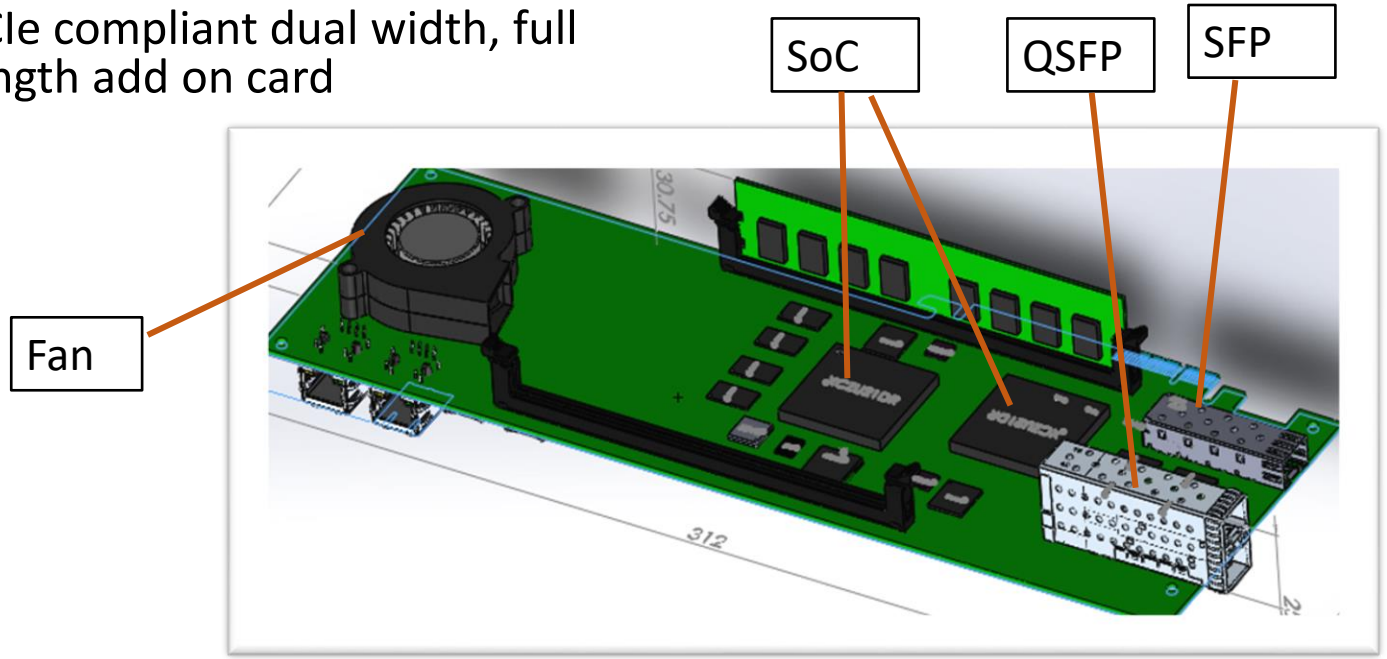
Baseband Card



Baseband unit PCB

Side view

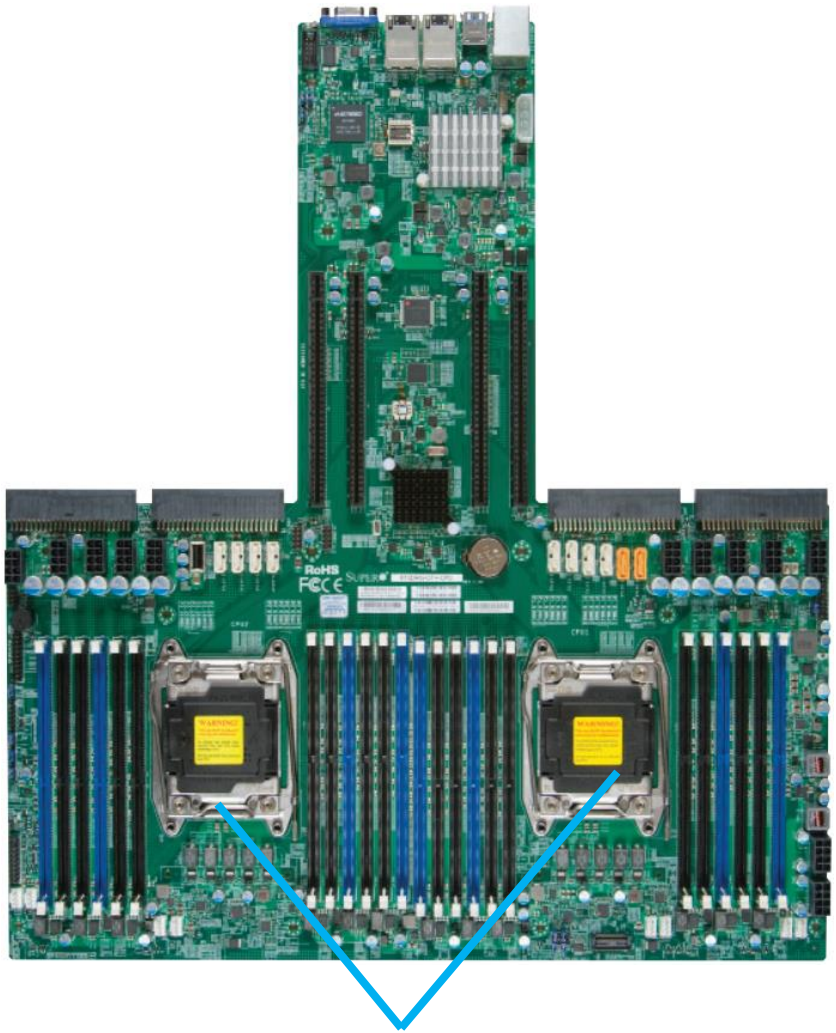
- PCB size: 312x111.5x1.6 (mm)
- PCIe compliant dual width, full length add on card



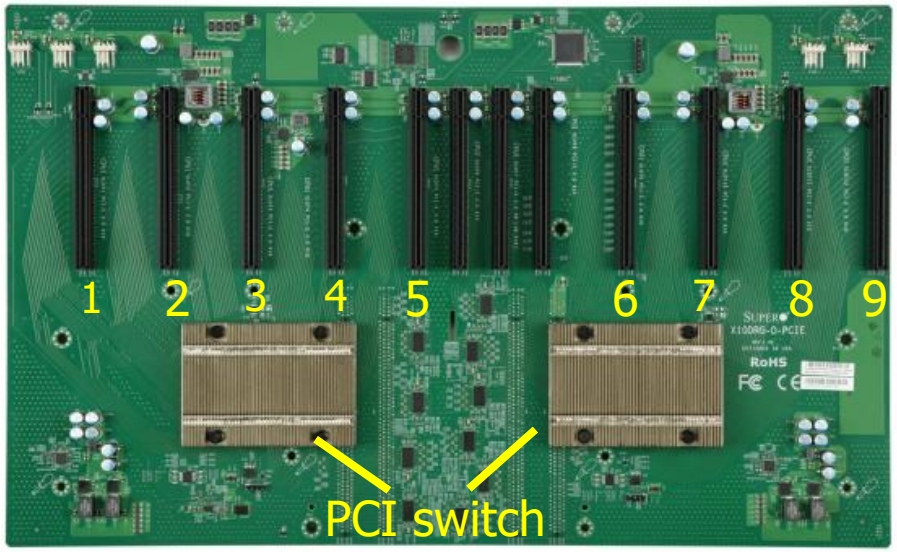
Top view

Specifications of Server

CPU Motherboard



Intel Xeon scalable up to 28 cores



PCIe motherboard

Thank You !